

CURRENT LITERATURE.

The natural history of plants.¹

When we recently welcomed the announcement that Kerner's *Pflanzenleben* was to be translated into English and published by A. & C. Black, we did not even hope that an edition would be prepared for this country. The issue of such an edition by Messrs. Henry Holt & Co. is therefore a most agreeable surprise. The first volume, in two parts, dealing with forms and growth, is now before us, and the second volume is in press.

Professor Oliver has done English speaking botanists a favor in translating this work. But he has done more, for it is hardly necessary to say to botanists that the appearance of Kerner's work in English will do much towards bringing modern botany before the intelligent public. We need more of this kind of teaching that will bring those not professionally interested in botany to some realization of its scope and great interest. The fascinating style of the author, and his freedom from pedantry in the use of terms, have been admirably retained by the translator. In fact, nothing in the style reveals that the book is a translation, which can be said of very few of the scientific books that have come to us from Germany.

This lucidity, and the excellent illustrations, not only will introduce the non-botanical reader to the science of botany, but should serve as a lesson to the professional botanist in the art of presentation. As a source of material and illustration for lectures no book has been the equal of Kerner's *Pflanzenleben*; and its usefulness will be multiplied many fold now that students and amateurs can be referred to it.

The general subjects treated are: the living principle in plants; absorption of nutriment; conduction of food; formation of organic matter from the absorbed inorganic food; metabolism and transport of materials; growth and construction of plants; plant-forms as completed structures.

It will be seen that physiology and ecology are the dominant thoughts, and the latter is far too much neglected in these days of morphology and physiology. But the subjects listed do not do justice to the inter-

¹ KERNER, ANTON, VON MARILAUN. The natural history of plants, their forms, growth, reproduction, and distribution. Translated from the German by F. W. Oliver, with the assistance of Marian Busk and Mary F. Ewart. Half-volumes I and II. Large 8vo. pp. 777, figs. 188, colored plates 8. New York: Henry Holt & Co. 1895. \$7.50.

esting discussion and the lucid style. For instance, under "the living principle in plants," in addition to the ordinary treatment of protoplasm such a chapter as "communication of protoplasts with one another and with the outer world" gives new zest to the subject; and under "absorption of nutriment" the subjects of parasitism and symbiosis are discussed. More than all is to be commended that summary view of plants which considers them in relation to their environment, as organisms showing a resultant structure. It is time to suggest that the laboratory student should also become a student of nature, and that the purpose of our analysis is not fulfilled until it leads to synthesis.

A good word also needs to be said for the excellence of the volumes from the book-maker's point of view. When we say that the quality of the original edition is really surpassed we say what can rarely be said of such works. Typography, printing, colored plates, and binding leave nothing to be desired—except a lower price.

A new hand book of systematic botany.

The wonderful botanical activity of the last decade is bearing fruit in a sudden gush of text-books, and in no department are they more numerous than in taxonomy. Research has been so multiplied that results can be applied to the general subject, and schemes of classification are appearing with bewildering frequency. It is well to have Dr. Warming's book¹ introduced among English texts, for the Danish original and Knoblauch's German edition have long been recognized as important contributions to systematic botany. Professor Potter has given us much more than a faithful translation, for he has called in the aid of specialists in the revision of certain parts. He has also done excellent service in presenting in an appendix a comparative view of the different prominent schemes of classification. Aside from the fact that the matter is as fresh as the nature of the subject permits, certain peculiarities of presentation characterize the book. Five grand divisions are recognized, phanerogams being broken up into gymnosperms and angiosperms; a view which certainly commends itself in so far as it emphasizes the fact that gymnosperms are no more related to angiosperms than to pteridophytes. Perhaps, however, the group archegoniates is a better expression of the real relationships. The thallophytes are presented in three groups, the myxomycetes sharing rank with algæ and fungi. The classification of the fungi is by Dr.

¹WARMING, DR. E. A hand book of systematic botany; translated and edited by M. C. Potter. 8vo. pp. 620, illustrated. New York: Macmillan & Co., 1895. \$3.75.

Knoblauch, following the most recent researches of Brefeld. Among the angiosperms the sequence of orders is based upon opinions as to morphological simplicity and complexity. For instance, epigyny and perigyny are less simple than hypogyny; zygomorphy is younger than actinomorphy; forms with united leaves indicate younger types than those with free leaves; acyclic flowers are older than cyclic; and so on. Such a sequence is largely like many that precede it, differing only in minor details. In our opinion the most useful chapter of the book is that entitled "the transition from the cryptogams to the phanerogams," not that its facts are new, but because it is a compact presentation of what is often scattered. This particular "transition" may be no more important than several others, but the "gap" at that point has such a wide reputation that it is worth while to make a special effort to fill it. The Warming-Potter book is a very welcome one to American botanists.

Elements of botany.¹

This little book is one of the series of Cambridge Natural Science Manuals, and is quite a commentary on the status of botany at that ancient university. It is rather startling to us that our trans-atlantic friends are compelled to put such primers in the hands of university students. It is too meager even for our secondary schools. We have been cursed with "fourteen weeks of botany," but fourteen days of botany is something appalling. Taking for granted that English botanists are not to blame for this state of affairs, but rather the mediaeval spirit of the universities, it becomes a matter of interest to see how our unfortunate brethren have accomplished this marvel of condensation. We believe that Mr. Darwin has done all that could be expected in the time at his command. How much better this is than nothing is another matter. He presents morphology, physiology, classification, anatomy, does not neglect the cryptogams, and does what is styled "practical work." The subjects of the fourteen practical exercises suggest the general range of the accompanying lectures. They are (1) the cell, (2) the seed and seedling, tubers, bulbs, (3) the root, (4) the herbaceous stem, (5) the arboreal stem, (6) phloem and cork, (7) the leaf, (8) reproduction, (9) the fern, (10) the reproduction of the fern, (11) the flower, (12) the flower, dichogamy, (13) the seed, (14) the fruit. Several examples are used under each study, so that a comparative view may be had. Well as the work has been done, our one thought is that of pity that it had to be done.

¹ DARWIN, FRANCIS; *The elements of botany*. Small 8vo. pp. 235; figs. 94. Cambridge (England) University Press. New York: Macmillan & Co. 1895.

Minor Notices.

A MOST COMMENDABLE undertaking has been begun by Mr. C. G. Lloyd of Cincinnati, Ohio. He is photographing the larger fungi, natural size, upon plates 6 by 8 inches. These are distributed to friends, and so great an acquisition are they that any one interested in fungi will consider himself exceedingly fortunate to be counted upon the list of recipients. The first distribution consisted of the three species: *Morchella conica*, *Peziza badia*, and *Lycoperdon separans*. The selection of specimens is excellent, and the photographic work is beyond all criticism. This distribution was so warmly received that Mr. Lloyd decided to change his original plan and use the photogravure process of reproduction. The second distribution, just made, includes *Gyromitra brunnea* and *Polyporus squamosus*. These are not so clear and striking as the photographic prints of the first distribution, but are still very handsome plates. Mr. Lloyd proposes to reissue the first three numbers by the photogravure process, provide descriptive text, and thus enable those who choose to bind the series in a uniform volume. Mr. A. P. Morgan is sponsor for the accuracy of the determinations. Although the issue is at present a complimentary distribution, the work is of so much value that we trust Mr. Lloyd will place some copies on sale for the benefit of the less fortunate part of the botanical public.

THE *Pflanzenphysiologische Versuche* of Oels, which was translated by D. T. MacDougal last year,¹ has been recast, and now appears from the publishing house of Henry Holt & Co. as a new work.² The book has been made more convenient and more satisfactory for general use than its predecessor, by a better arrangement of the subject matter, a clearer separation into chapters and paragraphs and the addition of titles to both paragraphs and experiments. Some substitutions and changes have been made in the illustrations, and also in minor features. The work as it now stands well meets the needs of high schools and colleges for a laboratory manual for elementary classes in vegetable physiology. It is, however, essentially the same work as Oels', and it seems to us that the compiler has scarcely given his chief source due credit by the scant acknowledgment in the preface that "the general form of Oels' manual has been retained . . . and a few paragraphs of the text have been repeated here without indication of their origin." Scientific men cannot be too scrupulous in this matter.

¹ See review in this journal 19: 341.

² MACDOUGAL, D. T.—Experimental plant physiology. 8vo. pp. vi+88, illust. New York, Henry Holt & Co. 1895.

THE FACT THAT the first edition of "*The horticulturist's rule-book*"¹ was issued late in 1889, and that a third edition is now called for, is sufficient evidence that the book is appreciated by those for whom it is chiefly intended, viz., fruit growers, market gardeners, and florists. Yet there is information, compact and well-arranged, not only for them, but much that will be useful to any person who has a garden of any sort, or even a lawn to look after. In short, it is one of those handy reference books that ought to be found in every library. The name of the author—a guarantee of its reliability—the dainty and appropriate dress given it by its publishers, and the low price commend it at once to the intellect, the eye, and the pocket.

MANY STUDENTS of plants must also be entomologists enough to recognize insects at least in a general way. Flowers and insects are so closely related that insect manuals as well as phanerogam manuals must find a place upon the botanist's shelves. Professor Comstock has just published a work² which botanists should have. It is handsomely printed, profusely illustrated, and still so cheap that it should find ready sale. Numerous analytical keys direct the student to the larger groups, and the abundant figures still further simplify his determinations. We are also glad to note an attempt on uniform terminology based upon the study of homologies.

A WEED BULLETIN by L. H. Dewey has been issued by the U. S. Department of Agriculture as one of the Farmers' series (No. 28). It describes, with aid of cuts, ten of the weeds which have received most notice during the year, excluding the Russian thistle. These are *Lactuca Scariola*, *Plantago aristata*, *Solanum Carolinense*, *S. rostratum*, *Amaranthus spinosus*, *Xanthium spinosum*, *Chondrilla juncea*, *Daucus Carota*, *Avena fatua*, and *Camelina sativa*. Much practical information is given. Characteristics of one hundred weeds are briefly stated in form of a table.

¹BAILEY, L. H.—*The horticulturist's rule-book*, a compendium of useful information for fruit-growers, truck-gardeners, florists, and others. 3d ed., revised and extended. Small 8vo. pp. X + 302. New York: Macmillan & Co., 1895. 75 cents.

²COMSTOCK, JOHN HENRY AND ANNA BOTSFORD: *A manual for the study of insects*. Comstock Pub. Co., Ithaca, N. Y. 1895. 8vo. pp. 700, illustr., net \$ 3.00.